



# Differences in delivery of prehospital ambulance care comparing non-white versus white patients with suspected cardiac chest pain: cross-sectional study

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## Background and aims

Quality implies equitable care irrespective of ethnicity. There have been few previous studies investigating quality of prehospital cardiac care by ethnicity.

We aimed to investigate whether prehospital care for suspected cardiac pain varied by ethnicity.



## Methods

We conducted a cross sectional analysis of retrospective electronic clinical data for patients with chest pain over one year (August 2011 to July 2012) extracted from a single regional ambulance service.

This included patient demographic data (ethnicity, age, sex, deprivation), clinical measurements (blood pressure, respiratory rate, pain assessment, electrocardiogram, temperature, blood glucose or oxygen saturation), drugs (aspirin, glyceryl trinitrate, morphine, Entonox) and outcomes such as transportation to hospital or referral to primary care.

We used multivariate regression to investigate differences in care comparing non-white with white patients.

## Results

There were 7,046 patients with suspected cardiac chest pain. Of these, the ethnicity of 4,825 patients was recorded with 4,661 (96.6%) white, 164 (3.4%) non-white. We found that for almost a third of patients (32%, 2,221), their ethnicity had not been recorded. Non-white patients were similar in sex ( $p=0.63$ ) and socioeconomic group ( $p=0.07$ ) but significantly younger in age ( $p<0.001$ ) than white patients.

After adjusting for age, sex, socioeconomic status and whether patients were transported to hospital:

- Non-white patients were similar to white patients in recording of blood pressure, pain score and electrocardiogram but significantly more likely to have temperature (77.4 vs. 69.8%), blood glucose (78.7 vs. 69.4%), and oxygen saturation (85.4 vs. 80.7%) recorded.
- There were no differences in treatment with aspirin, nitroglycerin or Entonox.
- Non-white were less likely than white patients to be transported to hospital but the difference was small (93.3 vs. 94.4,  $p=0.02$ ).

## Conclusions

We found differences in prehospital ambulance care for non-white compared with white patients with cardiac pain that could be due to recording bias, varying clinical condition or provider management.[1]

<sup>1</sup> David, G., and Harrington, S. (2010) *Population density and racial differences in the performance of emergency medical services*, *Journal of Health Economics*, 29 (4): 603-615.



## Limitations and further research

Ethnicity data were missing in a high proportion (32%) of records. Further analysis should involve larger and more complete datasets to explore ethnic differences in greater detail. Further work is needed to explore reasons for differences in prehospital ambulance care for non-white compared with white patients.